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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,690	12/19/2003	Shubhra Venna	137501	7790
24214	7590	02/23/2007	EXAMINER	
JAMES D IVEY 3025 TOTTERDELL STREET OAKLAND, CA 94611-1742			TU, JULIA P	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	02/23/2007	PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/743,690	Applicant(s) VENNA ET AL.
	Examiner Julia P. Tu	Art Unit 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 19 December 2003.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-18 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 19 December 2003 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_\_.  
\_\_\_\_\_

## DETAILED ACTION

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in INDIA on 12/24/2002. It is noted, however, that applicant has not filed a certified copy of the 1296/DEL/02 application as required by 35 U.S.C. 119(b).

### ***Claim Objections***

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 8, 8-17 have been renumbered 8, 9-18.

2. Claims 8, 8, and 9 (renumbered 8, 9, and 10) are objected to because of the following informalities:

In claim 8, the examiner suggests to change "the transmission channel" in step (b) to "a transmission channel."

In claim 8 (renumbered 9), the examiner suggests to change "the method according to claim 7" on line 1 to "the method according to claim 8."

In claim 9 (renumbered 10), the examiner suggests to change "the method according to claim 7" on line 1 to "the method according to claim 8."

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 10 (renumbered claim 11) is rejected under 112, 1<sup>st</sup> paragraph as being a single means claim with undue breadth. The means recitation does not appear in combination with another recited element of means. See MPEP § 2164.08(a).

Claims 12-18 are rejected as incorporating the deficiencies of claim 11 upon which they depend.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: modulating and encoding data bits/samples.

6. Claim 2, 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the forward and conjugate pulses" in lines 1-2.

There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites "the input digital data bits/samples" in step (a). There is insufficient antecedent basis for this limitation in the claim.

Claims 3-7 and 8-10 (renumbered 9-11) are rejected as incorporating the deficiencies of claims 1 and 8 upon which they depend.

#### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 and 10 (renumbered 11) are rejected under 35 U.S.C. 102(b) as being anticipated by Mohan et al. (WO 02/096052).

(1) with regard to claim 1:

As shown in figure 1, Mohan discloses a communication system, comprising:

(a) a digital data input source (data input in figure 1);

(b) a modulator (data modulation in figure 1);

- (c) an encoder (118 in figure 1);
- (d) a decoder (124 in figure 1);
- (e) a demodulator (page 21, lines 3-4); and
- (f) a data transmission link (114 in figure 1);

wherein the communication system transmits mass quantities of digital data through the data transmission link at high-rates of speed by way of modulating and encoding the data bits/samples (page 21, lines 9-19).

(3) with regard to claim 10 (renumbered claim 11):

Mohan discloses a means for transmitting mass quantities of digital data through a data transmission link at high-rates of speed by way of modulating and encoding the data bits/samples (see figure 1).

(4) with regard to claims 2 and 12:

Mohan further teaches the forward and conjugate pulses are generated by a mono-shot pulse generator (page 20, lines 23-24).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohan et al. (WO 02/096052) in view of Hartmann et al. (US 2003/0145036).

(1) with regard to claims 3 and 13:

Mohan discloses all of the above subject matters except for splitting the input digital data bits into a plurality of data bit sets. However, splitting the input digital data into a plurality of data sets is well known in the art as it is evident by Hartmann et al. (page 4, paragraph [0046]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hartmann to the teaching of Mohan in order to provide significant improvement in efficiency of modulation process in the communication system.

(2) with regard to claim 8:

As shown in figure 1, Mohan discloses a method for transmitting mass quantities of digital data through a data transmission link at high-rates of speed in a communication system including:

- (b) encoding forward and conjugate pulse position over the transmission channel (118 in figure 1);
- (c) decoding the pulsed data to discriminate between the forward and conjugate pulses in a signal (124 in figure 1); and

(d) demodulating the data to recombine the forward and conjugate pulses into a desired digital output (page 21, lines 3-4).

Mohan et al. disclose all of the above subject matters except for splitting the input digital data bits into a plurality of data bit sets. However, splitting the input digital data into a plurality of data sets is well known in the art as it is evident by Hartmann et al. (page 4, paragraph [0046]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hartmann to the teaching of Mohan in order to provide significant improvement in efficiency of modulation process in the communication system.

(4) with regard to claim 8 (renumbered claim 9):

Mohan further teaches the forward and conjugate pulses are generated by a mono-shot pulse generator (page 20, lines 23-24).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julia P. Tu whose telephone number is 571-270-1087. The examiner can normally be reached on 7:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

J.T.  
02-14-2007



CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER